



NOVA SCHOOL OF
BUSINESS & ECONOMICS

M.Sc. in Management

Work Project

**Team Learning Linking Paradoxical Team
Leadership and Team Performance: A Moderated
Mediation Study**

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January 4th, 2019

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Abstract

Teamwork, and in turn, team leadership, are gaining popularity in today's dynamic and complex economy. Therefore, the influence of team leadership has been subject to ample research. In addition to team leadership, team learning and team psychological safety are two key terms commonly analysed in team performance studies. Using a moderated mediation model, this thesis analyses the effect of paradoxical team leadership and its influence on team performance through exploitative and exploratory team learning. Also, the moderation effect of psychological safety on the relationship between paradoxical team leadership and exploitative and exploratory team learning is analysed. The study included 33 teams (124 individuals) from different industries. Our findings suggest that paradoxical team leadership has a positive influence on exploitative team learning, exploratory team learning and team performance. In addition to that, exploratory team learning mediated the paradoxical team leadership – team performance relationship. In contrast with our expectations, exploitative team learning did not mediate the relationship between paradoxical team leadership and team performance. Neither did team psychological safety moderate the relationship between paradoxical team leadership and exploitative and exploratory team learning. Lastly, the moderated mediation effect was insignificant. Based on this research, team leaders are urged to adopt a paradoxical leadership style in order to stimulate team learning and team performance.

Key words: Teams, paradoxical team leadership, team exploitative learning, team exploratory learning, team psychological safety, team performance

1. Introduction

Today's dynamic economy requires effective leadership that ensures high team performance. This leadership task brings along manifold challenges. In addition to facing challenges concerning globalisation, ethics and sustainability, the task of team leaders is becoming increasingly complex due to the rising importance of satisfying contradictory demands simultaneously (Smith & Lewis, 2011; Smith & Tushman, 2005). In the past, effective team leadership entailed the decision between competing approaches, and thus represented a 'necessary evil', enhancing short-term performance (Smith & Lewis, 2011; Zhang, Waldman, Han, & Li, 2015). However, the rising theory of paradox emphasizes the importance of harmonizing competing and divergent demands, such as social missions and business outcomes, in order to benefit long-term performance (Smith & Lewis, 2011).

Scholars and leaders recognize the relevance of the theory of paradox in the field of leadership and research has been conducted in order to gain deeper insights into employee resistance to change (Kan & Parry, 2004), leadership sustainability (Smith & Lewis, 2011), organisational ambidexterity (Zheng-Mao, 2017) and creativity (Liu, Wu, & Lin, 2017). Despite extensive research on the theory of paradox in leadership positions and the effect on organisations (e.g. Kan & Parry, 2004; Smith & Lewis, 2011; Zheng-Mao, 2017), studies measuring the effect of paradoxical leadership on team performance have so far been limited. With the increasing use of teams in organisations (Kozlowski & Ilgen, 2006), team performance contributes to determining business success and thus its antecedents require extensive research (Nahrgang et al., 2013). Overall, research targeting paradoxical team leadership and its potential influence on team performance is critical for both academic and business purposes.

In addition to understanding whether paradoxical leadership influences team performance, this research aims to explore *why* this relationship exists. In this thesis, we argue that team learning is a mediating mechanism in the relationship between paradoxical leadership

and team performance. Lewis, Andriopoulos and Smith (2014) have found a significant positive relationship between paradoxical leadership and organisational learning. Despite the difference in scale, often, an organisational structure is largely made up of teams contributing to organisational learning. Therefore, we argue this research provides a foundation for team-level research.

Indeed, an important point of focus entails team learning. Team learning addresses the team interactions (to share, acquire and combine knowledge) that lead to permanent changes in a team's behavioural potential (Burke, Stagl, Salas, Pierce, & Kendall, 2006; Edmondson, 1999). Various scholars have touched upon team learning using two generic types of learning, namely exploratory learning and exploitative learning (March, 1991). Exploratory learning entails activities from which untouched skills and capabilities might evolve, and involves team flexibility, experimentation and variation (March, 1991). On the other hand, exploitative learning entails learning activities that go deep into existing skills and their refinement, selection and execution (March, 1991). In addition to that, exploitative learning involves the creation of routines and restructures existing knowledge, skills and processes in order to reduce intragroup ambiguity (Groysberg & Lee, 2009).

Exploitative and exploratory team learning are stimulated by opposing leadership styles. Authoritarian leadership styles have potential to promote exploitative learning since the focus lies on existing processes and their refinement, important elements of exploitative team learning (Kostopoulos & Bozionelos, 2011). Moreover, teams operating under authoritarian leaders are unlikely to engage in experimentation (Gibson & Vermeulen, 2003), a concept associated with exploratory learning (Kostopoulos & Bozionelos, 2011). In contrast, empowering leadership styles grant subordinates freedom to experiment and engage in learning, two crucial aspects of exploratory learning (Arnold, Arad, & Rhoades, 2000; Kostopoulos & Bozionelos, 2011; Srivastava, Bartol, & Locke, 2006). Indeed, paradoxical leadership styles aim to incorporate

the two divergent styles. Therefore, we argue paradoxical leadership has a positive influence on both exploratory and exploitative team learning. Empirical research by Kostopoulos & Bozionelos (2011) suggests the two generic learning types have a positive influence on team performance. Thus, we argue there is a positive influence of paradoxical team leadership on team performance due to the mediating presence of exploitative and exploratory team learning.

Furthermore, this thesis aims to explore *when* the relationship between paradoxical team leadership and (1) exploitative and exploratory team learning, and (2) team performance, holds. We argue one of the boundary conditions determining relationship strength between paradoxical team leadership, team learning and team performance concerns the levels of team psychological safety. Edmondson (1999, p. 354) describes the concept as “a shared belief held by individual team members that the team is a safe place for interpersonal risk taking”. We argue this perception of psychological safety influences the strength of the relationship between paradoxical leadership and the two generic team learning types. In other words, we argue the proposed positive relationship is stronger when team members experience high levels of psychological safety, facilitating exploratory and exploitative learning. When team members experience low levels of psychological safety, the effect of paradoxical team leadership on both types of team learning diminishes. Moreover, we argue psychological safety moderates the indirect effect of paradoxical team leadership on team performance. The proposed relationships are displayed in Figure 1.

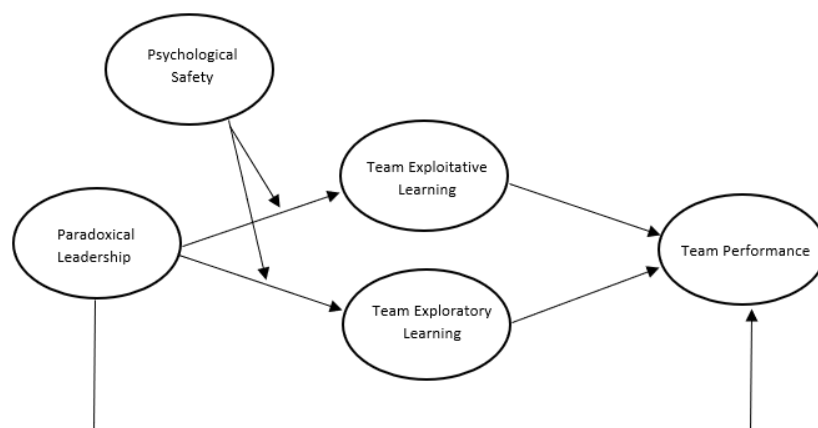


Figure 1: The Proposed Conceptual Model

This thesis aims to fill the gap in the currently existing literature by analysing and discussing the effect of *paradoxical leadership* on *team performance*. In addition to that, the mediating mechanism of *exploratory and exploitative team learning* is analysed and discussed. Lastly, the circumstance, or the boundary condition of *psychological safety* is analysed to explore the effect on the relationship between paradoxical team leadership, team learning and team performance.

2. Hypotheses Development

2.1 Teams

Today's environment is becoming increasingly complex and dynamic, and therefore sheds light on the importance of teamwork. Teams are strategic units set up to accomplish organisational excellence and are used frequently to solve knowledge intensive tasks (Guzzo, 1996; Strang & Jung, 2009). Researchers view modern-day teams as a fundamental learning and knowledge system, leading to state-of-the-art innovation and business success (Edmondson, 2002; Edmondson & Nembhard, 2009; Furnham, 2005). Teams can be constructed and configured in a great amount of ways, drawing attention to intra-team dissimilarities and the advantage of connecting individuals deploying divergent frames of reference (Mathieu, Maynard, Rapp, & Gilson, 2011; Van der Vegt & Bunderson, 2005). However, to reduce ambiguity regarding the concept, Kozlowski and Bell (2013) have identified seven characteristics that a group of individuals should adhere to in order to be called a team: The group of individuals consists of at least two people; The group of individuals has the purpose of executing business that is relevant to the organisation; The group of individuals works on a shared goal(s); The tasks worked on by the individuals display interdependencies; The individuals display behaviours of social interaction; The group of individuals is drawn to personal boundaries and the group of

individuals is installed in an organisation promoting interaction and exchange with colleague units.

Professional teams are crucial in light of complex and dynamic challenges since the team structure allows for individuals with dissimilar frames of reference, knowledge and skills, to contribute a wide range of qualities and expertise to a shared purpose (Culotta, 1993). As a result, the value of a team exceeds the accumulated value of individual team members (Culotta, 1993). The inestimable value of teamwork has been emphasized by various scholars after finding empirical evidence for a positive association between teamwork and high levels of team performance in business environments (e.g. Leonard, Graham, & Bonacum, 2004; Sheard & Kakabadse, 2016; Tambe, 1997). In addition to that, researchers are engaged in continuous research regarding additional factors that promote fruitful team performance, including but not limited to team size, leadership, diversity and context (e.g. Ancona & Caldwell, 1992; Bell, Villado, Lukasik, Belau, & Briggs, 2011; Haleblian & Finkelstein, 1993).

However, scholars are aware of potential bias when deploying teams (Janis, 1971; Morris & Hayes, 1997; Raghuram, 2018). Groupthink is an important factor to consider for team leaders. The term is associated with group pressure resulting in a decrease of mental capabilities, reality testing and moral judgements (Janis, 1971). When groupthink occurs in team, individuals lose their capability to objectively consider alternative courses of action to maintain a ‘we-feeling’, and thus team performance might deteriorate (Janis, 1971). In other words, team members develop an ‘illusion of invulnerability’ and overconfidence (Raghuram, 2018). Additionally, the phenomenon has the potential to strengthen the development of ‘in’ and ‘out’ groups, compromising thorough and efficient business processes (Raghuram, 2018). Another common issue interfering with the value of teams concerns free-riding behaviour, described as a *“problem of the non-performing group member who reaps the benefit of the accomplishments of the remaining group members without little or no cost to him/herself”*

(Morris & Hayes, 1997, p.3). The inequality of effort exhibited by individual team members again leads to inefficiencies and deteriorates the added value a team can bring to organisations. In order to minimize the occurrence of the aforementioned issues, team leaders should show strong leadership skills.

2.2 Team Effectiveness Models

The increasing use of teams in present-day organisations has led to a strong need to identify and understand factors that enhance team effectiveness (Ilgen, Hollenbeck, Johnson, & Jundt, 2005). McGrath's (1964) 'input-process-output' (I-P-O) model is a widely used model to explain team effectiveness. The *input* factors include individual-level factors, group-level factors and environmental-level factors. The input factors are conditions that exist prior to performance episodes, which are periods in which performance develops and feedback is given (Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000). The inputs contribute to the group process and lead to performance outcomes while enabling and constraining team interaction (Mathieu et al., 2000). The aforementioned input factors, as well as interaction and contextual factors play a crucial role in determining team effectiveness.

The processes, defined as "*interactions directed toward task accomplishment*", show how inputs are converted into outputs (Mathieu et al., 2008, p. 412). The outcomes represent the results stemming from the previous two factors. To acquire accurate and valid results, various units of measurement of team effectiveness have been developed: team satisfaction, team viability and team performance (Hackman, 1987). Team satisfaction indicates the extent to which team members are satisfied with ongoing team processes (Fung & Siow, 2014). Team viability is a team's capacity to grow and develop to achieve future success, largely depending on team members and their willingness to continue their role in the team (Bell & Marentette, 2011). Lastly, team performance focuses on team processes as well as the quality of the work delivered (González-Romá & Hernández, 2016). This thesis focuses on team performance.

Despite the extensive implementation of the I-P-O model by scholars, the framework has been subject to substantial criticism (Ilgen et al., 2005). Ilgen et al. (2005) argue the complexity of teams is not represented in an appropriate manner. Firstly, team processes, mediators in the I-P-O model, are often cognitive or emergent states: *‘cognitive, motivational, and affective states of teams that are... dynamic in nature and vary as function of team context, inputs, processes and outcomes’* (Mathieu et al., 2008, p. 423). Thus, considering all mediators to be a process of interaction amongst team members would not fit the original intention of the I-P-O model. In addition to that, the original I-P-O model has been criticised for the absence of a feedback loop, a critical factor in modern-day teams (Marks et al., 2001; Mathieu et al., 2000; Moreland, 1996). Despite McGrath’s (1964) beliefs that outputs can be used as a foundation for inputs and processes in subsequent performance episodes, this was not sufficiently evident in the original I-P-O model. For this reason, new team effectiveness models, such as the IMO model, have been developed (Ilgen et al., 2005; Mathieu et al., 2008).

One of the newly developed models, the input-mediator-output, or the IMO team effectiveness framework (Mathieu et al., 2008), recognizes the non-linearity of teamwork and displays the nesting influence between different layers within an organisation (Ilgen et al., 2005; Klein & Kozlowski, 2000). This nesting influence generally flows from the higher-level factors, such as organisational factors, to lower-level factors, such as team level and individual level factors (Klein & Kozlowski, 2000). The IMO model contains inputs, mediators and outcomes. These different elements are connected in a stepwise manner as well as through a feedback loop. This feedback loop suggests teams develop and progress from one cycle to another, leading to the potential adaptation of processes and emergent states (Mathieu et al., 2008). In contrast with the I-P-O model, mediators are no longer required to be processes such as team learning, team conflict or team communication. In the IMO model, mediators are team processes or emergent states such as trust and team cohesion. This thesis aims to explore (1)

the effect of the inputs, being paradoxical team leadership, on a team process, being exploitative and exploratory team learning. Furthermore, this thesis analyses the moderation effect of the emergent state, team psychological safety, on the aforementioned relationship. Additionally, the influence of exploitative and exploratory team learning on our outcome, team performance, is analysed. Since this study incorporates team processes as well as emergent states, the utilisation of the IMO model is justified. This thesis disregards the feedback loop.

2.3 Paradoxical Team Leadership

Team leadership, a relational and dynamic concept, used to require a choice between competing and divergent approaches to management, and thus leadership styles (Zhang et al., 2015). However, the attention to paradox has been increasing and therefore calls the need for an appropriate way to address these contradictions from a management perspective (Clegg, Cunha, & Cunha, 2002; Poole & van de Ven, 1989). These paradoxes consist out of clear and rational factors which, when juxtaposed, insinuate illogical combinations (Smith & Lewis, 2011). A flexible and adaptive leadership style tackling these divergent demands is ‘paradoxical leadership’, a leadership style incorporating managerial tensions such as individualisation versus generalisation, short-term versus long-term focus, exploration versus exploitation (ambidexterity) and authority versus empowerment (Zhang et al., 2015). This upcoming leadership style enables fast-paced adaptable decision making and has been demonstrated to enhance novelty, creativity and long-term learning performance (Cameron, 1986; Lewis, Andriopoulos, & Smith, 2014; Zhang et al., 2015). This effect stems from ongoing attempts to combine seemingly juxtaposed approaches, and is therefore critical in modern-day leadership (Lewis et al., 2014; Zhang et al., 2015). The tensions and paradoxes have been widely studied on a macro or organisational level (Zhang et al., 2015). However, limited research has been done regarding the effect of paradox on team performance, the main focus of this thesis (Zhang et al., 2015).

The extent to which paradoxical leadership is implemented in light of team management can be analysed through the use of various dimensions: (1) uniform treatment while allowing for individualization, (2) combining self- and other-centeredness, (3) maintaining control while allowing autonomy, (4) enforcing work requirements while allowing employee flexibility and (5) maintaining distance and closeness (Zhang et al., 2015). The third and fourth dimensions concern the distribution of control and employee empowerment, addressed by Sagie (1997) as the ‘loose-tight principle’. Ouchi (1978) categorized the element of control into two groups; behaviour control and output control. The first emphasizes discipline and sets requirements in order to control team member behaviour. The latter, output control, influences work outputs through the distribution of decision making power. This thesis utilizes Zhang et al.’s (2015) dimension concerning behaviour control; ‘enforcing work requirements while allowing flexibility’. Team leaders could enforce work requirements while allowing flexibility by, for example, stressing conformity in task performance but allowing for exceptions, or by clarifying work requirements without micromanaging. Moreover, leaders could be highly demanding while tolerating mistakes and without being hypercritical (Zhang et al., 2015).

Lorinkova, Pearsall and Sims (2013) conducted a longitudinal study regarding team performance under directive and empowering leadership styles. Directive leadership gives team members structure through the use of communicating clear directions and performance expectations in a top-down manner (Somech, 2006). Thus, directive leadership enforces work requirements and expectations on subordinates, which relates to the paradoxical leadership dimension analysed in this thesis. In addition to the directive leadership style, empowering leadership was explored using a different group of test subjects (Lorinkova et al., 2013). Empowering leadership grants team members responsibility and flexibility, and delegates power from higher-level employees to subordinates, granting subordinates a degree of freedom (Lorinkova et al., 2013; Spreitzer, 1995). Consequently, individuals experience an enhanced

intrinsic task motivation (Spreitzer, 1995). The ‘enforcing work requirements while allowing flexibility’ dimension combines the control and top-down goal setting, belonging to directive leadership, with flexibility and freedom, belonging to empowering leadership. Lorinkova et al.’s (2013) findings suggest both team leadership styles have the ability to significantly improve team performance. However, directive leadership shows performance enhancement on a short term whereas empowering leadership allows for increased performance on the long term, the ultimate and sustainable goal for organisations (Lorinkova et al., 2013). Considering the fact that both leadership styles improve performance upon separate implementation, the combination of the two distinct leadership styles is expected to lead to alluring team performance results. Thus, in order to gain long-term success, one should conduct business in line with an ambidextrous ‘both-and’ rather than an ‘either-or’ philosophy (e.g. Benner & Tushman, 2003; Smith & Lewis, 2011).

The ‘both-and’ view is also supported by Zhang et al. (2015) and is reflected in the ‘enforcing work requirements while allowing flexibility’ dimension of paradoxical leadership, since characteristics of directive as well as empowering team leadership are incorporated (Zhang et al., 2015; Lorinkova et al., 2015). In addition to that, the implementation of seemingly polarized strategies has the ability to balance out and manage risks (Lewis et al., 2014). Lastly, when leaders deploy a ‘both-and’ mentality, they might act as role models for their subordinates and demonstrate how to manage divergent demands (Graen & Scandura, 1987; Fang, 2005). This teaches subordinates to be flexible, adaptive and proactive (Zhang et al., 2015; Parker, Williams, & Turner, 2006). Following this reasoning, we argue that paradoxical leadership has a positive influence on team performance.

Hypothesis 1: Paradoxical leadership has a positive influence on team performance

2.4 Team Learning

In order to optimize team potential, team members should learn from each other, and therefore team learning is considered to be essential in predicting team performance (Edmondson, 2002). Teams engage in team learning when “*a relatively permanent change in the team’s collective level of knowledge and skill produced by the shared experience of the team members*” can be observed (Ellis et al., 2003, p. 822). Ellis et al. (2003) claim the level of team learning surpasses the accumulated total of individual learning due the continuous interactions. Whereas Ellis et al.’s (2003) definition prioritizes the knowledge- and skill levels, other authors emphasize the importance of “*asking questions, seeking feedback, experimenting, reflecting on results, and discussing errors or unexpected outcomes of actions*” (Edmondson, 1999, p.353). The latter definition gravitates towards the enhancement of a team’s development through team processes.

In order to get a more in-depth analysis of team learning, this thesis utilizes the two generic types of team learning identified by March (1991), namely exploratory learning and exploitative learning. These team learning types are claimed to be the essential in the development of organisational learning theories (March, 1991). Exploitative learning focuses on the refinement, efficiency and execution of existing knowledge and skills (March, 1991). This includes recombining current knowledge and/or skills, and the creation of routines, in order to maximize team performance (Groysberg & Lee, 2009). Contrasting, exploratory learning pertains the search, variations, experimentation and discovery of novel knowledge and/or skills (March, 1991). These two team learning types are commonly conceptualized as polarized activities leading to trade-offs. Nonetheless, various scholars have found significant evidence that high levels of both exploitative learning and exploratory learning can coexist (e.g. Gibson & Birkinshaw, 2004; Jansen, Tempelaar, van den Bosch, & Volberda, 2009).

Existing research points out person-focused leadership styles characterized by encouragement and empowerment (to be recognized in the paradoxical leadership dimension

utilized), have a significant positive influence on exploratory team learning by diminishing team members' feelings of insecurity when sharing novel ideas (Koeslag-Kreunen, van den Bossche, Hoven, Van der Klink, & Gijsselaers, 2018; Wong & Tjosvold, 2010). Therefore, empowered employees experience higher levels of confidence and are willing to explore and evaluate novel courses of action, and thus, are more likely to engage in exploratory learning activities. In addition to that, person-focused leadership behaviours support team learning through promoting positive relationships and creating a good atmosphere (Hirst, Mann, Bain, Pirola-Merlo, & Richver, 2004; Somech, 2006). When experiencing close relationships amongst team members, employees tend to feel respected and are more willing to share and receive relevant knowledge, information and critique, aiding the team exploratory and exploitative learning processes.

On the other hand, studies revealed the importance of structure and work requirements, associated with task-focused leadership (to be recognized in the paradoxical leadership dimension utilized), since this stimulates exploitative team learning through team reflexivity (Koeslag-Kreunen et al., 2018; Somech, 2006). Team reflexivity encourages team members to be critical towards each other, resulting in team learning and high quality deliveries (Somech, 2006). However, in order for team members to express critical thoughts towards peers, it is important that the relationships amongst team members are strong, an aspect of person-focused leadership. Overall, one can see the juxtaposed team leadership styles have a positive influence on team learning. Since paradoxical leadership entails polarized team leadership styles, we argue the combined team leadership style facilitates overall team learning too. However, to acquire valuable insights, the distinction of learning types is crucial since differences in influence (of paradoxical team leadership) on the two learning types might provide novel insights to current literature.

Indeed, the amount and type of team learning occurring within a team depends on manifold factors including team leadership. Various forms of team leadership include control and the top-down communication of work requirements, characteristics also to be recognized in the ‘enforcing work requirements while allowing employee flexibility’ dimension of paradoxical leadership (Zhang et al., 2015). In the presence of work requirements and specific goals, subordinates or team members are likely to engage in rapid routine development and the use of standardized procedures, characteristics of exploitative team learning (Bryant, 2003; Grant & Grant, 2016; Kostopoulos & Bozionelos, 2011). Thus, we argue the aspect of paradoxical team leadership granting team members a clear structure and goals encourages exploitative team learning. Despite communicating goals and work requirements, paradoxical team leaders grant teams flexibility and freedom (Zhang et al., 2015). When freedom is enjoyed by teams, teams are more likely to speak up, test and share novel ideas, contributing to maximisation of human potential and increased levels of exploratory team learning (Sosik, 1997; Grant & Grant, 2016; McGrath, 2001; Kostopoulos & Bozionelos, 2011). Thus, we argue the aspect of paradoxical team leadership granting team members flexibility and freedom encourages exploratory team learning. Overall, paradoxical team leadership entails control and goal setting, leading to rapid routine development and standardization, and thus contributes to exploitative team learning. Additionally, the flexibility and freedom granted to team members leads to the development of novel ideas, contributing to exploratory learning. Upon individual implementation, task-focused leadership styles and person-focused leadership styles enable exploitative and exploratory team learning, respectively. Since paradoxical team leadership deals with the managerial tension of combining the opposing leadership styles, we argue paradoxical leadership leads to both exploitative and exploratory team learning simultaneously, and thus enables organisational ambidexterity. We hypothesise the following:

Hypothesis 2a: Paradoxical leadership has a positive influence on exploitative team learning.

Hypothesis 2b: Paradoxical leadership has a positive influence on exploratory team learning.

We propose a positive influence of paradoxical team leadership on exploitative and exploratory team learning. The positive influence of team learning (exploitative and exploratory) on team performance has been found to be significant by various scholars (e.g. Edmondson & Lei, 2014; Kostopoulos & Bozionelo, 2011; Savelsbergh, van der Heijden, & Poell, 2009). Building upon team effectiveness models by Mathieu et al. (2008), we propose an indirect positive effect of paradoxical team leadership on team performance through exploitative and exploratory team learning. The incorporation of control in paradoxical team leadership facilitates exploitative learning by using routines and standardized procedures (Bryant, 2003; Grant & Grant, 2016; Kostopoulos & Bozionelos, 2011). The development of routines and standardized procedures, enables elevated levels of effectiveness and team reflexivity, contributing to team performance (McGrath, Arrow, & Berdahl, 2000; Somech, 2006). Furthermore, the presence of routines, an important aspect of exploitative team learning, allows for enhanced performance by optimizing efficiency and coordination processes (Marks, Zaccaro, & Mathieu, 2000; Kostopoulos & Bozionelo, 2011).

Next to enhancing team performance through exploitative team learning, paradoxical team leadership enhances team performance through exploratory team learning. The empowerment of teams grants team members freedom to create and share novel ideas and thus to engage in exploratory learning (Zhang et al., 2015). Consequently, this process induces enhanced productivity (Sosik, 1997). Moreover, research by Gilson, Mathieu, Shalley and Ruddy (2005) points out that teams that are supported and empowered to use both creative problem solving skills (exploratory team learning) and standardized routines (exploitative team learning) experience high levels of team effectiveness (Gupta, Smith, & Shalley, 2006; Gilson et al., 2005). Thus, paradoxical team leadership influences team performance through enabling

enhanced efficiency and coordination, as well as through enhanced productivity (Bryant, 2003; Grant & Grant, 2016; Sosik, 1997). We hypothesise the following:

Hypothesis 3a: Exploitative team learning mediates the relationship between paradoxical leadership and team performance.

Hypothesis 3b: Exploratory team learning mediates the relationship between paradoxical leadership and team performance.

2.5 Team Psychological Safety

Team psychological safety in the workplace has become increasingly important over the past decades. The concept is defined as ‘a shared belief held by individual team members that the team is a safe place for interpersonal risk taking’ (Edmondson, 1999, p.354), and can be identified as an emergent state that affects team processes and outcomes (Marks et al., 2001). This emergent state entails the creation of an environment that tolerates risk taking and failure, making the exploration of novel ideas a safe practise (Edmondson, 2004; Edmondson, 1999; Schein & Bennis, 1965).

The existence of interpersonal relationships, based on trust and respect, amongst team members is essential to the development of a safe environment (Collins & Smith, 2006; Edmondson, 1999). The interpersonal relationships enable, for example, knowledge sharing, the willingness to suggest organisational improvements, and the willingness to explore and develop novel ideas (Baer & Frese, 2003; Detert & Burris, 2007; Siemsen, Roth, Balasubramanian, & Anand, 2009). The aforementioned interpersonal relationships and trust should be strong to reach high levels of psychological safety (Collins & Smith, 2006).

When broadening the scope, one can see the openness, flexibility and absence of hypercriticality reflected in the concept of psychological safety, are identified to be important drivers of team paradoxical leadership (Zhang et al., 2015). Indeed, paradoxical team leadership

enables openness, flexibility and risk-taking, positively influencing team learning. However, in order for the effect to triumph, high levels of psychological safety must be observed as psychological safety stimulates collaboration and interpersonal risk taking (Edmondson & Lei, 2014; Edmondson, 1999), factors we deem critical to team learning.

The exploitative team learning process is induced by paradoxical team leadership behaviours which set goals and work requirements and thus, team members are encouraged to share and improve existing routines and procedures (Zhang et al., 2015). We argue that under high levels of psychological safety, team members are more willing to share and utilize relevant routine knowledge, experience and expertise due to high quality interpersonal relationships (Hansen, 1999; Yagil & Luria, 2010).

Furthermore, paradoxical leadership behaviours positively influence exploratory learning and knowledge sharing by allowing for team members to be flexible and creative (Zhang et al., 2015). In this way, team members encourage each other to take interpersonal risks and pursue novel uncertain ideas (Crossan, 1998; Edmondson, 1999). However, again, in order for these relationships to prevail, high levels of psychological safety and trust are required (Crossan, 1998).

Therefore, we argue that psychological safety strengthens the relationship between team paradoxical leadership and both types of team learning. This stems from the fact that team members feel comfortable and are not punished for potential errors made in the learning process, and thus are willing to take risks, leading to high team learning levels (Edmondson, 1999; Zhang et al., 2015). However, when low levels of psychological safety are experienced, team members become increasingly aware of potential judgement and consequences when making errors (Edmondson, 1999). Due to diminished knowledge sharing and risk taking, team learning will slow down (Hülshager, Anderson, & Salgado, 2009). Considering the fact that our proposed relationships follow an IMO model, it is likely that the effect of psychological safety

is also reflected on the indirect paradoxical team leadership-team performance relationship. We hypothesise the following:

Hypothesis 4: Psychological safety moderates the relationship between paradoxical team leadership and exploitative team learning (hypothesis 4a), and between paradoxical team leadership and exploratory team learning (hypothesis 4b), in such a way that the relationship is stronger under high levels of psychological safety.

Hypothesis 5: Psychological safety moderates the indirect effect of paradoxical leadership on team performance via team exploitative learning (hypothesis 5a), and via team exploratory learning (hypothesis 5b), in such a way that the relationship is stronger under high levels of psychological safety.

3. Methodology

3.1 Context

Today's team leaders face manifold challenges regarding effective team management. This stems from the growing importance of satisfying divergent demands simultaneously, or paradox, recognized by various authors such as Clegg et al. (2002), and Poole and Van de Ven (1989). In addition to that, team leaders face the challenge of leading a team of individuals with different, or even opposing frames of references (Van der Vegt & Bunderson, 2005), requiring a team leader to be highly adaptive and paradoxical. The theory of paradox is becoming increasingly important. Nevertheless, there is much to be explored in the field of paradoxical leadership. The leadership style has been widely researched on a macro, or organisational level (Vera & Crossan, 2004). The micro-level, however, has not received elaborate attention on all aspects. While the individual level effect of paradoxical leadership has been touched upon by scholars (e.g. Tripathi, Miron-Spektor, & Lewis, 2018), the team level has been left unexplored. Consequently, this thesis aims to expand current knowledge and to fill the existing literature

gap. Therefore, this thesis explores various concepts; team paradoxical leadership, team psychological safety, team exploitative learning, team exploratory learning, and finally, team performance.

After exploring the individual concepts using existing literature, the relationships amongst the aforementioned concepts were analysed. The relationships were tested using empirical data from 33 teams in a variety of organisations and industries. The industries the subject teams operate in include, amongst others, 'banking and financial services', 'commerce and sales', 'consultancy, informatics and scientific activities', and 'education'. Not only the industries varied amongst teams, nationalities of team members also differ. The teams approached included national as well as international teams. The international teams had one or more non-Dutch participants. These foreign nationalities include German, Belgian, Portuguese, Indian, Polish and Greek.

3.2 Sample and Procedure

The mean age of the respondents was 32.35 (SD=10.664) and 33 (26.6%) identified as team leader and 91 (73.4%) identified as team member. Of the team leaders, 13 identified as female whereas 20 identified as male. The remaining 91 respondents was rather equally divided reporting 46 females and 45 males. Regarding tenure, 40% of the team leaders had been in their current leadership position from three to five years, 20% had started their position less than a year ago, 20% has been in the leadership position between one and two years and 20% had been in their position for over five years. However, when looking at the team members, one can see most teams are 'young' teams. 37.1%, of the team members reported to have been part of their current team for less than a year. Of the remaining respondents 33.9%, 12.9% and 16.1% reported to have been part of their current team for one to two years, three to five years, and more than five years, respectively.

The teams operated in various industries, with the largest share (27.4%) operating in the ‘consultancy, informatics and scientific activities’ industry. Another industry hosting a large proportion of teams in this study is the ‘education’ industry in which 22.6% of the teams operated. The rest of the teams work in ‘agriculture and food’ (10.5%), ‘artistic, show and sport activities’ (7.3%), ‘banking and financial services’ (6.5%), ‘commerce and sales’ (9.7%), ‘construction’ (4%), ‘hospitality, restaurants and tourism’ (0.8%), ‘high-tech’ (5.6%), ‘life sciences and health’ (0.8%), and ‘pensions and insurance’ (4.8%). Furthermore, one can see the Dutch nationality is predominant in the questioned teams, reporting a share of 71.8% of all team leaders and members. 12.9% respondents reported to have a Belgian nationality, 12.1% a German nationality and the remaining 3.2% indicated to have either a Greek, Indian, Polish or Portuguese nationality. Overall, 63.7% of the respondents have received a university diploma. Lastly, the data shows a majority (58.9%) of teams containing three or four members including the team leader. 34.7% of the respondents indicated to be in a team of five or six people and only 6.5% reported to be in a team of seven or eight.

For this thesis, teams were required contain at least three members who work on shared goals that are relevant to the organisation. In addition to that, the tasks performed by the team are subject to interdependencies and require members to interact socially (with team members as well as other units) while being aware of personal boundaries. The teams meeting the aforementioned criteria received a personalized team code (to be indicated in the questionnaire) to be able to aggregate the individual responses to the team level. In addition to that, respondents were asked about their role in the team, which is crucial since team leaders and team members received a questionnaire adapted to their role in the team. Using the Qualtrics ‘display logic’ function, if indicated one was a team leader, the questionnaire skipped questions about the leader’s paradoxical team leadership behaviours. This is because the research revolves around team members’ perception of paradoxical leadership behaviours. On the other hand, when

measuring team performance, the team leader's opinion is of high value as they are likely to have a clear overview of the goals achieved (Kraut, Pedigo, McKenna, Dunnette, 1989). In addition to that, common method bias is reduced when utilizing the team leader ratings (Kostopoulos and Bozionelos, 2011). Therefore, performance-related questions were only posed to team leaders, as well as a question regarding the tenure in the current leadership position. Despite utilizing varying questions depending on the position within the team, the majority of the questions were similar for both parties. These questions regarded the psychological safety within the team as well as the levels of exploitative and exploratory learning. At the end of the questionnaire, there were various questions asking for sociodemographic information. However, overall, when analysing the data, tenure and team size were held constant so a general relationship between variables can be established.

The questionnaire was distributed to personal contacts using LinkedIn, email as well as hard copies of the questionnaire. Upon requesting participation, teams were informed that their responses would be treated confidentially, would only be used for the purpose of this research and they could end their participation at any given point in time. By disclosing this, the research adheres to data protection requirements and avoids potential response bias. In order to confirm their participation, respondents were asked to sign (agree to) an informed consent so the data is available for the study.

This research included data from 33 teams (124 respondents) of sizes ranging from three to eight team members. The total amount of participants who participated in the questionnaire amounted up to 133. Despite receiving data from fully completed questionnaires, six (out of 133) responses were disregarded due to a lack of responses from other team members. This resulted in three teams of only two members, which cannot be considered a team (Moreland, 2010). In addition to that, one survey displayed a completion rate of 17%. However, in order for the statistical analysis to be accurate, questionnaires should have a 100% completion rate.

Furthermore, two respondents indicated to be unwilling to participate in the study, and therefore their questionnaire ended prematurely, resulting in an insufficient completion rate

3.3 Measures

Paradoxical Team Leadership. Zhang et al. (2015) developed a five-dimension scale to measure the level of paradoxical leadership behaviours displayed. For the purpose of this research, the ‘enforcing work requirements while allowing flexibility’ dimension was analysed. The four individual items included in the questionnaire comprised, amongst others: ‘The team leader is highly demanding regarding work performance but is not hypercritical’ (Appendix A) (Zhang et al., 2015). The items were posed to only team members to reflect on their team leader’s paradoxical leadership behaviours. The items were measured using a Likert scale ranging from ‘Strongly Disagree’ to ‘Strongly Agree’ with corresponding values ranging from one to seven. The reliability of this scale was measured using the Cronbach’s alpha. For this scale, the alpha indicated a high reliability of 0.93.

Team Exploitative Learning. Team exploitative learning was analysed utilizing a scale developed by Kostopoulos and Bozionelos (2011). The variable comprised five items including, but not limited to: ‘The members of our team recombine existing knowledge for accomplishing work’ and ‘Team members continuously improve and refine their existing knowledge and expertise’ (Appendix A). These questions were posed to both team leaders and team members, and responses were recorded using a 7-point Likert scale to indicate agreeance with the statements included in Kostopoulos and Bozionelos’ (2011) scale. The Cronbach alpha indicated a high reliability of 0.86, suggesting the scale used is reliable in context of this research.

Team Exploratory learning. Team exploratory learning was, like team exploitative learning, analysed using scales created by Kostopoulos and Bozionelos (2011). The items

comprising exploratory team learning included, amongst others: ‘Team members are systematically searching for new possibilities’ and ‘Team members experiment with new and creative ways for accomplishing work’ (Appendix A). The five items were again measured using a 7-point Likert scale with 1 being ‘Strongly Disagree’ and 7 being ‘Strongly Agree’ and all respondents were to answer this question. The scale used for this variable was deemed reliable due to its high Cronbach’s alpha: 0.94.

Team Psychological Safety. Edmondson (1999) created a scale which was utilized in order to measure team psychological safety. The scale comprised seven items, including, amongst others: ‘If you make a mistake on this team, it is often held against you’ (Appendix A). Again, a 7-point Likert scale was used in order to measure and analyse the responses acquired. However, one can see various statements are phrased in a negative manner, and thus, the indication of low values on the Likert scale indicates high levels of team psychological safety. In order to create consistency, these items were reversed. One can conclude this scale is reliable due to its high Cronbach alpha of 0.924.

Team performance. González-Romá and Hernández (2016) created a two-item scale to measure team performance. Both items, ‘How well do you think the work team you manage performs?’ and ‘What is the quality of the work performed by the team you manage?’, were measured on a 7-point Likert scale ranging from ‘1. Very Poorly’ to ‘7. Exceptional’. The Cronbach alpha shows high reliability of 0.922.

When testing the relationships between variables, one needs to control for variables that can lead to biases in order to acquire an accurate analysis. First of all, 37,1% of the respondents indicated to be part of their team for less than a year, and the lack of tenure diversity has a potential negative effect on team performance (Ancona & Caldwell, 1992). Therefore, the variable was controlled for. A second control variable is team size. The majority of the respondents indicated to be part of a small team with three to four members. However, other

respondents indicated to be part of a team double that size. According to various scholars, team size influences efficiency (Hackman, 1987; Belbin, 2000, Kozlowski & Bell, 2013) and thus, in order to rule out the potential effect of differences in team size, we controlled for the variable.

3.4 Analytical Strategy

In order to collect responses from teams, online and offline tools were used. For the online collection, Qualtrics was used. The results were then transferred to IBM SPSS, software for statistical analysis. Offline responses were inserted into IBM SPSS manually. For the purpose of analysing the data collected, a statistical tool called 'PROCESS macro' was deployed (Hayes, 2013). In order to analyse variables and their relationships, Hayes (2013) developed various statistical models. Model 1 allowed us to test the conditional effect, or moderation effect, of team psychological safety on the direct influence of paradoxical team leadership on exploitative team learning and exploratory team learning (Hypotheses 4a & 4b) (Hayes, 2013). In order to test the effect on both variables, the model was generated twice (exploitative team learning and exploratory team learning). Furthermore, model 4 helped us analyse the direct influence of paradoxical team leadership on team performance (Hypothesis 1) as well as the indirect effect of paradoxical team leadership on team performance through team exploitative and exploratory learning (Hypotheses 2a, 2b, 3a & 3b) (Hayes, 2013). Thus, model 4 helped us explore a direct and mediation effect in the proposed conceptual model. Model 7 combined the previously mentioned moderation and mediation effect and was therefore used to test the overall proposed model (Hypotheses 5a & 5b) (Hayes, 2013).

Before running statistical tests with models by Hayes (2013), the data was prepared, meaning cleaned and recoded when necessary. Also, the separate items were combined to form the intended dimensions: 'paradoxical team leadership', 'team psychological safety', 'team exploitative learning', 'team exploratory learning', and 'team performance'. Since we are studying the concepts on a team level, the data from the team members was aggregated based

on the personal team codes. Several tests were run in order to check whether this aggregation was justified. Furthermore, bootstrapping allows distributions to approach normality and thus reduces potential skews. In addition to that, the bootstrapping function can reduce the standard deviations, making a distribution more centred. Therefore, when running statistical tests in PROCESS macro the data was resampled 5000 times (Hayes, 2013). Also, confidence intervals were generated at a 95% level.

4. Results

4.1 Justifying the aggregation

Since this thesis explores paradoxical leadership on a team level rather than on an individual level, the responses to the items of interest from team members and team leaders are subject to aggregation (Costa et al., 2013). This aggregation process is necessary for items to which more than one response per team was received. In other words, the responses to the items of paradoxical team leadership, team psychological safety, exploitative and exploratory team learning were all aggregated based on the team number. For the analysis of our dependent variable, team performance, aggregation was not deemed necessary since we only received input from one individual in the team, the team leader. Indeed, the justification of the aggregation is crucial for research purposes. Therefore, the standard deviations of the single items were computed to calculate the ‘within-group agreement’ per variable, or $r_{wg(J)}$. This value indicates to what extent the responses from different subjects are interchangeable (James, Demaree, & Wolf, 1993). A commonly used lower boundary is .70, values exceeding .70 are deemed good estimates (James et al., 1993). In this study, all computed aggregations can be justified when taking the $r_{wg(J)}$ as a criterion, providing values of .959 (paradoxical team

leadership), .964 (team psychological safety), .966 (exploitative team learning), and .964 (exploratory team learning) (Appendix B).

In addition to testing the $r_{wg(I)}$, two intra-class correlation coefficients (ICCs) were computed to strengthen the previously found justification. The F-tests computed for ICC(1) all displayed statistically significant results. This indicates that the variance between groups was higher than the variance within the groups, and thus the groups created fit together (Bliese, 2000). One can validate the results by comparing ICC(1) and ICC(2), with the latter being greater in all four cases: paradoxical team leadership, ICC(1) = .87, ICC(2) = .93; team psychological safety, ICC(1) = .9, ICC(2) = .92; exploitative team learning, ICC(1) = .9, ICC(2) = .91 and team exploratory learning, ICC(1) = .89 and ICC(2) = .91 (Appendix C).

4.2 Correlation amongst variables

The descriptive statistics for the ‘paradoxical team leadership’; ‘team psychological safety’; ‘exploitative team learning’; ‘exploratory team learning’ and ‘team performance’ are displayed in Table 1. The means are all exceeding the mid-point of four on the 7 point-Likert scale. Visually, this results in a skewed distribution with a left tail. Therefore, bootstrapping and the computation of confidence intervals is important to run and analyse the statistical tests. When analysing the control variables, one can see the average team size is relatively small with a mean of 3.76 (SD=1). The tenure of the team membership is also relatively low, indicating a mean of 23.58 months with a large standard deviation (< 2 years) (SD=18.94 months).

In addition to analysing descriptive statistics, a correlational analysis was run before commencing with the MACRO process. Table 1 indicates a significant positive correlation between paradoxical team leadership and exploitative team learning ($r = .49, p = .00$) and exploratory team learning ($r = .46, p = .00$). In turn, a significant positive correlation was found between exploitative team learning and team performance ($r = .89, p = .00$) as well as between

exploratory team learning and team performance ($r = .90, p = .00$). Lastly, paradoxical team leadership is positively correlated to team performance ($r = .73, p = .00$).

Table 1: Descriptive Statistics and Correlations

	M	SD	1	2	3	4	5	6	7
1. Paradoxical team leadership	5.19	1.47							
2. Team psychological safety	5.23	1.21	.25						
3. Exploitative team learning	4.93	1.11	.49**	.85**					
4. Exploratory team learning	4.96	1.28	.46**	.88**	.92**				
5. Team Performance	5.29	1.02	.73**	.76**	.89**	.90**			
Control variables									
6. Team size	3.76	1.00	.17	-.17	-.13	-.18	-.01		
7. Tenure	23.58	18.94	.20	-.03	-.13	-.06	.03	.44*	

Note. $n = 33$ teams, * $p < .05$. ** $p < .01$.

4.3 Hayes' PROCESS macro

4.3.1. A Mediation Analysis

Hypotheses 1, 2a, 2b, 3a and 3b were analysed using model 4 developed by Hayes (2013).

Model 4 represents a mediation model and tests the relationships displayed in Figure 3.

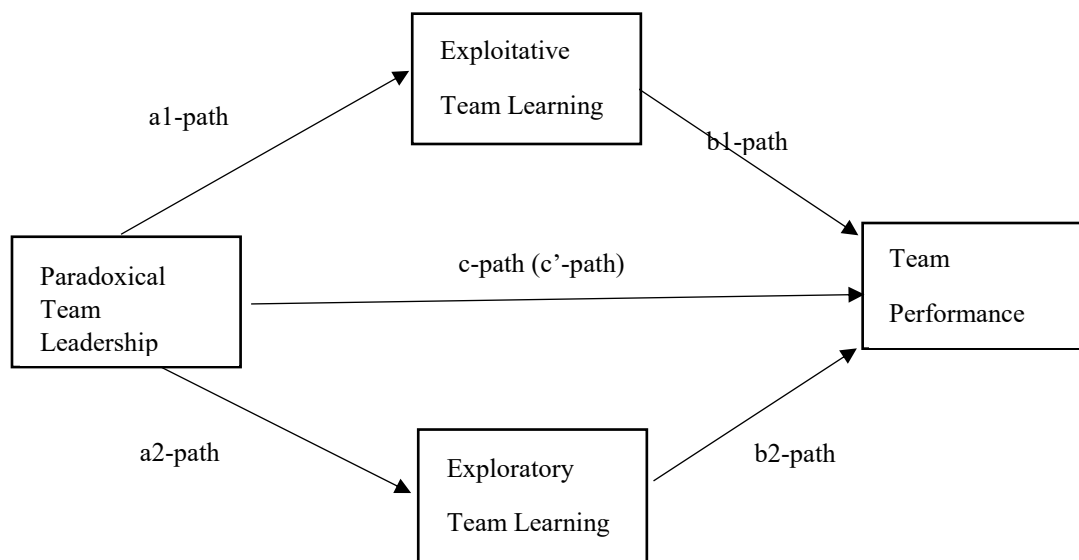


Figure 2: A mediation analysis – test paths (Model 4) (Hayes, 2013)

Table 2 displays the results of the mediation analysis run in IBM SPSS. The c-path, representing hypothesis 1, shows a statistically significant positive relationship between

paradoxical team leadership and team performance ($F_{(3, 29)} = 12.35, p = .00; \beta = .53, t(29) = 6.08, p = .00$). In this case, 56% of the variance in team performance is explained by the model ($R\text{-squared} = .56$). Another important measure entails confidence intervals, the 95% confidence interval for this model (95% CI [0.35, 0.71]) does not include the value of zero. When looking at the confidence interval and p-value, one can conclude the relationship is positive and significant. Therefore, hypothesis 1 is supported.

The a1 path, representing hypothesis 2a, shows a significant positive influence from paradoxical team leadership on team exploitative learning for the overall model ($R\text{-squared} = .31, F_{(3, 29)} = 4.38, p = .00$). The a1 path is positive and statistically significant ($\beta = .42, t(29) = 3.49, p = .00, 95\% \text{ CI } [.17, .66]$). Again, the p-values are approaching zero and the confidence interval does not include the zero point, making the findings statistically significant. The results support hypothesis 2a.

Moreover, the a2 path, associated with hypothesis 2b, shows a significant positive relationship between team paradoxical leadership and team exploratory learning ($R\text{-squared} = .29, F_{(3, 29)} = 3.86, p = .02; \beta = .45, t(29) = 3.20, p = .00, 95\% \text{ CI } [.16, .73]$). Hypothesis 2b is supported.

When analysing the proposed mediation, results suggest a positive and statistically significant relationship between exploitative team learning and team performance (b1: $\beta = .23, t(27) = 2.16, p = .04, 95\% \text{ CI } [.01, .45]$). The results also suggest a positive and statistically significant relationship between exploratory team learning and team performance (b2: $\beta = .40, t(27) = 4.36, p = .00, 95\% \text{ CI } [.21, .59]$). Furthermore, results show a significant indirect effect of paradoxical team leadership on team performance through team learning (c': $\beta = .25, t(27) = 6.77, p = .00, 95\% \text{ CI } [.18, .33]$). Also, when analysing exploratory team learning individually, results suggest a significant mediation effect (95% CI [.03, .41]) (Hypothesis 3b). However, results did not show significant evidence for the mediating role of exploitative team

learning (95% CI [-.05, .21]) (Hypothesis 3a). Concluding, hypothesis 3a is not supported whereas hypothesis 3b is supported.

Table 2: Mediation Regression Analysis

<i>Team Performance – Hypothesis 1</i>					
	β	SE	<i>t</i>	LLCI	ULCI
Constant	3.04**	.62	4.92	1.78	4.30
<i>Paradoxical team leadership (c-path)</i>	.53**	.09	6.08	.35	.71
<i>Team Size</i>	-.11	.14	-.78	-.40	.18
<i>Tenure</i>	-.00	.01	-.49	-.02	.01
<i>Note. R-squared = .56, F = 12.35, p = .00, *p < .05. **p < .01.</i>					
<i>Exploitative Team Learning – Hypothesis 2a</i>					
	β	SE	<i>t</i>	LLCI	ULCI
Constant	3.61**	.85	4.26	1.88	5.34
<i>Paradoxical team leadership (a1-path)</i>	.42**	.12	3.49	.17	.66
<i>Team Size</i>	-.16	.19	-.82	-.55	.24
<i>Tenure</i>	-.01	.01	-1.03	-.03	.01
<i>Note. R-squared = .31, F = 4.38, p = .01, n = 33, *p < .05. **p < .01.</i>					
<i>Exploratory Team Learning – Hypothesis 2b</i>					
	β	SE	<i>t</i>	LLCI	ULCI
Constant	3.90**	.99	3.94	1.87	5.92
<i>Paradoxical team leadership (a2-path)</i>	.45**	.14	3.20	.16	.73
<i>Team Size</i>	-.31	.22	-1.39	-.77	.16
<i>Tenure</i>	.00	.01	-.29	-.03	.02

<i>Team Performance – Hypothesis 3a & 3b</i>					
	β	<i>SE</i>	<i>t</i>	<i>LLCI</i>	<i>ULCI</i>
Constant	.64*	.28	2.24	.05	1.22
<i>Paradoxical team leadership (c'-path)</i>	.25**	.04	6.77	.18	.33
<i>Exploitation (b1-path)</i>	.23*	.11	2.16	.01	.45
<i>Exploration (b2-path)</i>	.40**	.09	4.36	.21	.59
<i>Team Size</i>	.05	.05	.99	-.06	.16
<i>Tenure</i>	.00	.00	.06	-.01	.01

Note. *R-squared* = .95, *F* = 96.26, *p* = .00, *n* = 33, **p* < .05. ***p* < .01.

4.3.2 A Moderation Analysis

The moderation effect of team psychological safety was tested using model 1 by Hayes (2013) (Figure 3). Firstly, the moderation effect on exploitative team learning (Figure 4) was analysed (Hypothesis 4a). One can identify a main effect of both paradoxical leadership ($\beta = .47$, $t(27) = 2.16$, $p = .04$) and team psychological safety ($\beta = .94$, $t(27) = 3.87$, $p = .00$) on exploitative team learning (Table 3). However, the interaction effect moderation effect of team psychological safety was not significant ($\beta = -.05$, $t(27) = -1.03$, $p = .31$). Moreover, the 95% confidence interval for the interaction effect created (95% CI [-.12;.08]) includes 0. Therefore, no statistically significant support was found for hypothesis 4a.

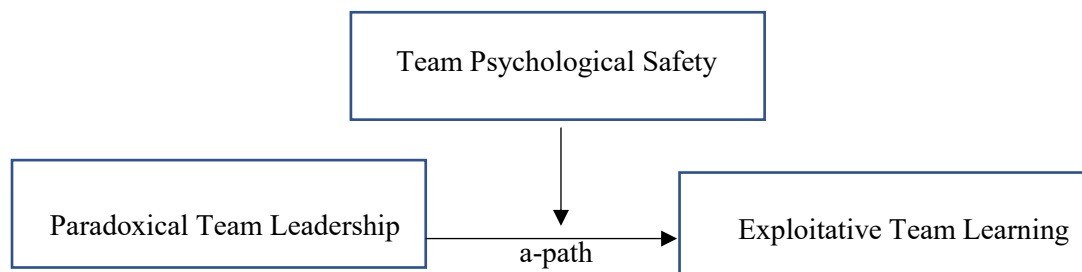


Figure 3: A Moderation Analysis – test paths

Table 3: Moderation Regression Analysis

<i>Exploitative Team Learning – Hypothesis 4a</i>					
	β	SE	t	LLCI	ULCI
Constant	-.97	1.16	-.83	-3.36	1.42
PTL	.47*	.22	2.16	.02	.91
Team Psychological Safety	.94**	.24	3.87	.44	1.44
PTL x Team Safety	-.05	.04	-1.03	-.14	.05
Team Size	.02	.10	.15	-.19	.22
Tenure	-.01*	.01	-2.10	-.02	-.00

Note. $R\text{-squared} = 0.84$, $F = 28.21$, $p = 0.00$, $*p < .05$. $**p < .01$.

To test the moderation effect of team psychological safety on the relationship between paradoxical team leadership and exploratory learning (Figure 4) (Hypothesis 4b), the same procedure was followed and results are illustrated in Table 4. Paradoxical team leadership does not display a statistically significant main effect on exploratory team learning ($\beta = .26$, $t(27) = 1.12$, $p = .76$) whereas team psychological safety does ($\beta = .86$, $t(27) = 3.23$, $p = .00$). The interaction effect of the variables showed insignificant results ($\beta = .00$, $t(27) = -.06$, $p = .95$). In addition to that, the 95% confidence interval created for the interaction coefficient ($[-.13, .13]$) includes the value of 0. Therefore, we have no evidence to support hypothesis 4b.

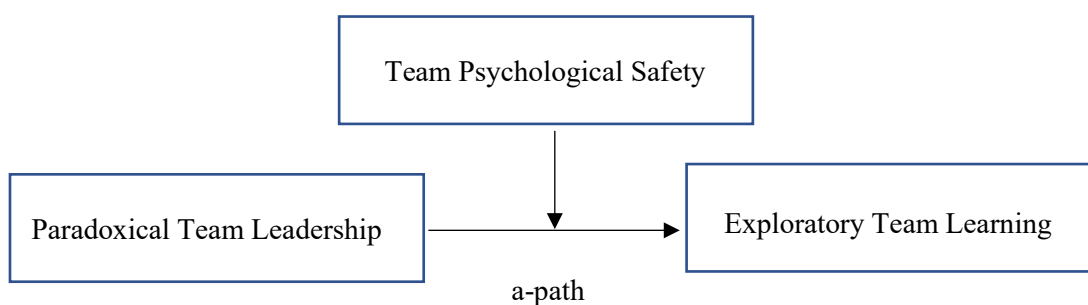


Figure 4: A Moderation Analysis – test paths

Table 4: Moderation Regression Analysis

<i>Exploratory Team Learning – Hypothesis 4b</i>					
	β	<i>SE</i>	<i>t</i>	<i>LLCI</i>	<i>ULCI</i>
Constant	-.40	1.27	-.31	-3.01	2.21
<i>PTL</i>	.26	.24	1.12	-.22	.75
<i>Team Psychological Safety</i>	.86**	.27	3.23	.31	1.41
<i>PTL x Team Safety</i>	.00	.05	-.06	-.10	.10
<i>Team Size</i>	-.09	.11	-.79	-.31	.14
<i>Tenure</i>	-.00	.01	-.75	-.02	.01

Note. *R-squared* = .85, *F* = 31.64, *p* = .00, **p* < .05. ***p* < .01.

4.3.3 A moderated mediation analysis

After having tested the simple mediations and moderations, we tested the significance of the moderated mediation model (Figure 5) (Hypothesis 5a & 5b). Hypothesis 5a and 5b proposed that team psychological safety moderates the indirect effect of the independent variable, paradoxical team leadership, on the dependent variable, team performance. Model 7 by Hayes (2013) was used to analyse whether exploitative and exploratory team learning, moderated by team psychological safety, mediate the relationship between our independent and dependent variables, team paradoxical leadership and team performance, respectively. In order to draw conclusions regarding the significance of the model, we looked at the ‘index of moderated mediation’ (Table 5) which indicated an insignificant moderated mediation. Thus, the direct as well as indirect moderation effects of team psychological safety are not significantly different from zero. The results display a confidence interval centred around zero with 95% CI [-.03, .03]

and 95% CI[-.05, .05] for team exploitative and exploratory learning, respectively. Thus, one can conclude hypothesis 5a and 5b, the moderated mediations, are not supported.

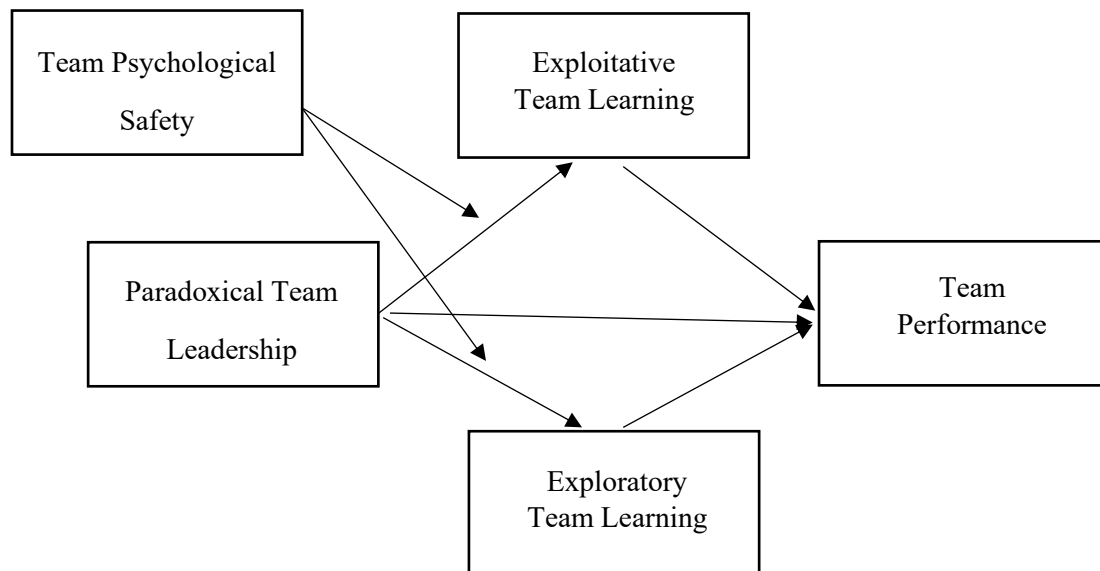


Figure 5: A moderated mediation model – test paths

Table 5: Index of Moderated Mediation

	Index	BootSE	BootLLCI	BootULCI
Team Psychological Safety - exploitation	-.10	.20	-.03	.03
Team Psychological Safety - exploration	.00	.03	-.05	.05

5. Discussion

5.1 General Discussion of Findings

In this dynamic and ever-changing economy with a growing importance to manage paradox, the study of paradoxical leadership has become a topic of interest amongst scholars (e.g. Smith & Tushman, 2005; Smith & Lewis, 2011). Ample research has been done on the paradoxical leadership style, nevertheless, the concept has been subject to very limited researches targeting

the team-level (Kan & Parry, 2004; Smith & Lewis, 2011; Liu, Wu & Lin, 2017; Zheng-Mao, 2017). This thesis contributes and builds upon existing literature by providing various novel empirically based insights.

This thesis suggests paradoxical team leadership has a significant positive influence on team performance. This is coherent with the hypothesis proposed based on existing studies by scholars (e.g. Benner & Tushman, 2003; Lorinkova et al., 2013; Smith & Lewis 2011; Zhang et al. 2015). Moreover, the findings of this thesis suggest that paradoxical team leadership has a direct positive influence on both exploitative and exploratory team learning, in line with the developed arguments based on combining existing research outcomes (e.g. Bryant, 2003; Grant & Grant, 2016; Kostopoulos & Bozionelos, 2011; McGrath, 2001; Sosik, 1997). In turn, the positive relationship between exploitative and exploratory team learning, and team performance found by Kostopolous and Bozionelos (2011) was also found in this thesis.

The findings also suggest that paradoxical team leadership positively influences team performance through exploratory team learning. In contrast, this was not the case for exploitative team learning, showing an insignificant mediation effect. A reason for the insignificant mediation effect of exploitative learning might be industry-related. Fifty per cent of the respondents indicated to be operating in the ‘consultancy, informatics and scientific activities’ and ‘education’ industry, two industries which are developing rapidly due to service innovation. The first industry is characterized by the upcoming disrupting technologies, while the educational industry is gradually getting rid of routinized tasks and shifts its focus to disruptive educational methods (Coonen, 2015). Therefore, performance goals are often based on innovation or exploration related concepts and consequently, one notices a strong relationship between team exploratory learning and team performance, resulting in a significant mediation effect.

Contrary to our expectations, team psychological safety did not moderate the relationship between paradoxical leadership and team learning. However, results suggested there is a direct relationship between team psychological safety exploitative and exploratory team learning, in line with findings by Kostopoulos and Bozionelos (2011). This significant direct effect suggests psychological safety should be treated as a direct antecedent of exploitative and exploratory team learning. Other reasons might be sample related: the mean rating for team psychological safety, which is 5.23 (on a 7-point Likert scale) and is significantly higher than the centre point of four. A reason for this skew might be related to the industries the respondents are active in: ‘consultancy, informatics and scientific activities’ (27.4%), ‘commerce and sales’ (9.7%) and ‘artistic, show and sport activities’ (7.3%). The aforementioned areas of business are generally associated with outstanding levels of creativity and innovation, rapid growth and in turn, shortening cycles (Neff, 2012; Amabile, 1998). Due to the dynamic and creative nature of the industries, they tend to be driven by high levels of confidence, trust and psychological safety, resulting in generally high responses regarding our moderating variable (Scott & Bruce, 1994; Mayer, Davis, & Schoorman, 1995). Consequently, there is an absence of responses rating team psychological safety with bottom-of-the-scale values which, in turn, could interfere with the identification of a significant interaction effect.

Another reason for generally high responses to team psychological safety might be related to the reported nationalities. 71.8% of the respondents indicated to be of Dutch origin, a culture in which sharing opinions, ideas and critical thoughts is encouraged. When looking at the Hofstede (2001) cultural index, the indicated masculinity of the Dutch culture takes on a very low value (14/100). According to Aumann & Ostroff (2006), this results in more social considerations, relationships and collaboration, terms associated with psychological safety. Also, the culture experiences low levels of power distance (38/100) (Hofstede, 2001). Therefore, teams are likely to share ideas and issues that have come up, and act upon this

without direct instructions from their team leaders (Soeters & Boer, 2000). Thus, the Dutch tend to be accustomed to sharing and consequently, feel safe doing so, leading to high levels of psychological safety. Again, this may result in insufficient variance of the team psychological safety, leading to inability to identify significant moderation effects.

Furthermore, groupthink can cause teams to not engage in learning activities and therefore, high levels of psychological safety might not strengthen the relationship between paradoxical team leadership and team learning, as groupthink might inhibit the team learning process. Groupthink can occur when individuals are deeply involved in a group and consequently, are not motivated to objectively evaluate the course of action taken, nor do they realistically evaluate alternative courses of action (Janis, 2008). Under high levels of team psychological safety, individuals are encouraged to take interpersonal risks and share ideas (Edmondson, 1999). Also, high levels of team psychological safety come with interpersonal relationships based on trust and respect, a prerequisite for groupthink to occur (Collins & Smith, 2006; Edmondson, 1999). Consequently, in case of groupthink, individuals try to, consciously or subconsciously, preserve the existing harmony in the team by refraining from evaluating alternative courses of action in an objective manner (Janis, 2008). However, in order for team learning to take place, teams should “*ask questions, seek feedback, experiment, reflect on results, and discuss errors or unexpected outcomes*” (Edmondson, 1999, p. 353). Thus, when groupthink occurs, teams are less likely to engage in learning activities.

Lastly, the relationship between paradoxical team leadership and team learning could be subject to moderation effects not explored in this thesis. One possible moderator to be researched in the future is team culture. Teams are made up of different combinations of individuals and therefore, unique team cultures are created, which has an effect on learning opportunities (Bloor, 1999; Lugosi & Bray, 2008). In case the team culture places strong emphasis on learning and thus provides teams with a large number of learning opportunities,

the influence of paradoxical team leadership on team learning might be stronger than under circumstances in which the team culture does not focus on learning, and offers very few learning opportunities and activities. In other words, team culture and its focus on learning moderates the relationship between paradoxical team leadership and team learning, and in turn, explains ‘when’ team learning can occur.

5.2 Theoretical Contributions

After conducting literature and empirical research, this thesis builds upon existing paradoxical leadership research by adding various theoretical contributions. Previous paradoxical leadership research addressed organisations as a whole rather than focusing on the team-level and the implications for team management (Zhang et al., 2015). This thesis studied the phenomenon of paradoxical leadership on a team-level and treated exploitative team learning and exploratory team learning as separate variables to gain a deeper understanding of the two concepts. Besides, we found evidence for newly-discovered relationships such as the effect of paradoxical team leadership on team performance, paradoxical team leadership on both exploitative and exploratory team learning, and the mediation effect of exploratory team learning when studying the indirect effect of paradoxical team leadership on team performance.

This thesis extends research conducted by Lorinkova et al. (2013) who found evidence stating both directive and empowering leadership lead to increased team performance when deployed individually. Paradoxical leadership manages contradictions and therefore can incorporate divergent leadership styles such as the above. Our research suggests the combination of divergent leadership styles, thus deploying them simultaneously, also results in a positive increase in team performance.

Moreover, the notion that the presence of work requirements and flexibility leads to exploitative and exploratory team learning, respectively, was supported (Bryant, 2003; Grant

& Grant, 2016; Sosik, 1997). Since paradoxical team leadership enforces work requirements while allowing for flexibility, exploitative and exploratory learning can be achieved simultaneously. In other words, the results suggest there is no trade-off to be made when implementing paradoxical team leadership.

Furthermore, Kostopoulos and Bozionelos (2011) predicted team psychological safety to act as a direct antecedent of team exploitative and team exploratory learning. Our results, using data with a large proportion of the teams working in the ‘consultancy, informatics and scientific activities’ and ‘education’ industry, support this positive direct effect. Therefore, we suggest Kostopoulos and Bozionelos’ (2011) results can be generalized to sectors beyond the ICTs and pharmaceuticals sectors, the sectors in which the initial research was conducted. In addition to that, we suggest the author’s results can be generalized to the Dutch population.

Lastly, the data showed exploratory team learning mediates the relationship between paradoxical team leadership and team performance. In addition to that, there was a significant direct effect of paradoxical leadership on team performance. Thus, exploratory team learning does not fully explain the effect of paradoxical leadership on team performance. This direct effect could indicate the presence of mediators that were not explored in the model. One possible mediator to be researched is team satisfaction. Divergent demands can be satisfied when team leaders embrace paradoxes, and therefore, teams experience the right balance between structure and freedom. We argue this balance contributes to team satisfaction. Team satisfaction, in turn, leads to engagement which we argue is a crucial for team performance (Sharma, 2017). This mediator, as well as other possible mediators, should be researched.

5.3 Limitations and Future Research

Despite the contributions building upon existing research, this thesis counts several limitations that needs addressing. The participating teams were approached through the use of convenience

sampling. Generally, the age, gender, team size and tenure were unlikely to lead to structural bias, since the number of respondents were rather equally distributed amongst age and gender groups. Team size and tenure were controlled for and thus are not expected to have led to biased results. However, various other factors, such as industry and nationality, might have influenced the results. Firstly, the majority of the teams indicated to be Dutch. We argue the results of the research can be generalized to other Western European culture due to overlapping cultural values. However, this generalisability should be further explored since Hofstede (2001) identified cultural differences on a national level using several dimensions. Not only the generalisability for Western European cultures should be explored, but also the generalisability beyond the Western European cultures. Furthermore, the data showed prevalence of certain industries. However, further studies need to be conducted to assess the applicability of our findings to other industries. Also, the limited sample size warns us to base upon the findings in a cautious manner until more elaborate research has been conducted.

Secondly, the study utilized cross-sectional data rather than longitudinal data. Therefore, we are unable to draw conclusions regarding causality between the variables studied. A future longitudinal study could shed light on the development of exploitative and exploratory team learning over time. Consequently, the effect on team performance can be recorded and analysed in order to establish causal relationships.

Third, to analyse team performance, team leaders were asked to report ratings for their teams. However, no data was collected to analyse whether these ratings were consistent with ratings given by team members. In other words, the ratings might be subject to observer bias, and thus team leaders tend to, subconsciously, see what they want or expect to see (Bruce, Shaper, Walker, & Wannamethee, 1988). To minimize potential bias in future research more objective measures are to be implemented when analysing the effect of paradoxical leadership and team learning on team performance.

Future research should analyse other mediators as well as moderators of the model studied. When analysing the mediation effect of exploitative and exploratory team learning, a significant direct effect from paradoxical team leadership on team performance was found. This could indicate the existence of unexplored mediating variables. Therefore, future research should focus on the identification of additional mediators to broaden current knowledge on the relationship between paradoxical team leadership and team performance. In addition to that, research should analyse the effect of possible moderators influencing the relationship between paradoxical team leadership and team learning.

5.4 Managerial Implications

Next to having theoretical implications, our findings contribute several implications for managers and team leaders. If team leaders aim to display high team performance, the influencing patterns leading to team performance need to be understood and acted upon. First, Lewis et al. (2014) and Zhang et al. (2015) emphasized the importance of paradoxical leadership, a leadership style combining divergent demands. Based on our research, we urge leaders to find a harmony between opposing team leadership styles to enhance team learning and team performance. This can be achieved in various ways. First of all, a team leader could exert his personality to actively shape the team processes while being humble and recognizing personal weaknesses. Second, team leaders could make use of more traditional and hierarchical decision making for certain decisions, while adopting an entrepreneurial start-up spirit when it comes to other decisions.

In addition to leading subordinates in a paradoxical manner, leaders are advised to see exploitative and exploratory team learning in light of a ‘both-and’ situations rather than a trade-off, since both can coexist in harmony, enabled by paradoxical leadership. Doing so results in high levels of ambidexterity and long-term performance (Benner & Tushman, 2003; Smith & Lewis, 2011; Zhang et al., 2015).

Furthermore, leaders should ensure a safety climate within their teams since the psychological safety climate was found to have a direct effect on both exploitative and exploratory team learning, in line with findings by Kostopoulos and Bozionelos (2011). When interpersonal relationships and trust develop amongst team members, team members are more likely to share ideas and collaborate in order to create team success (Collins & Smith, 2006; Crossan, 1998). In order to create a safety climate, team leaders can offer communication and feedback workshop for subordinates, while leading by example.

Lastly, our findings contribute to organisational recruitment practises. Paradoxical leadership can involve high levels of ambiguity and requires a leader to be dynamic and adaptable (Zhang et al., 2015). Also, the leader should be advanced at understanding and acting upon team dynamics. Thus, when recruiting a manager, or team leader, special attention should be pointed towards the adaptability skills and ambiguity preferences of the recruit. In addition to that, communication, coordination and social skills should be highly developed in order to be a successful paradoxical team leader.

5.5 Conclusion

Over the past decades, an increasing amount of attention has been granted to paradox and in turn, the management of these polarisations (Clegg et al., 2002). Despite extensive paradoxical leadership research on the organisational level, a research void exists when studying paradoxical leadership on a team level. This thesis aims to analyse the effect of paradoxical leadership in team-level settings. Through empirical research, we found evidence stating exploitative and exploratory team learning, as well as paradoxical team leadership, have a direct effect on team performance. Additionally, a positive relationship between paradoxical team leadership and both types of learning was found. In other words, the management and harmonisation of divergent demands leads to learning in the field of existing knowledge, but also in the field of novel knowledge and skills. In turn, the exploratory team learning variable

acts as a mediator, and thus facilitates an indirect effect of paradoxical team leadership on team performance.

Concluding, team leaders are advised to embrace paradoxes rather than making trade-offs between opposing leadership styles. We encourage scholars to further investigate possible moderation and mediation effects in order to broaden current understanding of the paradoxical team leadership phenomenon.

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Survey

1. I wish to participate in this study
2. Please enter the team code that has been provided to you
3. What is your role in the team? (Team leader / Team Member)
4. How long have you been in your leadership position? **

Paradoxical Team Leadership

5. My team leader stresses conformity in task performance, but allows for exceptions.*
6. My team leader clarifies work requirements, but does not micromanage work.*
7. My team leader is highly demanding regarding work performance, but is not hypercritical.*
8. My team leader has high requirements, but allows subordinates to make mistakes.*

Team Psychological Safety

9. If you make a mistake on this team, it is often held against you.
10. Members of this team are able to bring up problems and tough issues
11. People on this team sometimes reject others for being different
12. It is safe to take a risk on this team
13. It is difficult to ask other members of this team for help
14. No one on this team would deliberately act in a way that undermines my efforts
15. Working with members of this team, my unique skills and talents are valued and utilized

Exploratory Team Learning

16. Team members are systematically searching for new possibilities
17. Team members offer new ideas and solutions to complicated problems
18. Team members experiment with new and creative ways for accomplishing work
19. Team members evaluate diverse options regarding the course of projects
20. The members of our team continuously develop new skills

Exploitative Team Learning

21. The members of our team recombine existing knowledge for accomplishing work
22. In our team, we primarily perform routine activities
23. Our team implements standardized methodologies and regular work practises
24. Team members continuously improve and refine their existing knowledge and expertise
25. Team members mainly use their current knowledge and skills for performing their tasks

Team Performance

26. How well do you think your team performs?**
27. What is the quality of the work performed by the team?**
28. What gender do you identify with?
29. What is your age?
30. What is your country of origin?
31. What industry do you work in?
32. How long have you been member of your current team?
33. How many members does your team count?
34. What is the highest degree you obtained so far?

APPENDIX B

$$r_{WG(J)} = (J * (1 - S^2_k / \sigma^2_{EU})) / (1 + (J - 1) * (1 - S^2_k / \sigma^2_{EU}))$$

Paradoxical Team Leadership

Item	r_{wg}	
Q4	0.8530	
Q5	0.8174	
Q6	0.8830	
Q7	0.8614	
MEAN= $(1 - S^2_k / \sigma^2_{EU})$		0.8537
$R_{wg(J)}$		0.959

Team Psychological Safety

Item	r_{wg}	
Q9_recoded	0.8372	
Q10	0.8755	
Q11_recoded	0.7376	
Q12	0.8569	
Q13_recoded	0.7015	
Q14	0.6960	
Q15	0.8495	
MEAN= $(1 - S^2_k / \sigma^2_{EU})$		0.793
$R_{wg(J)}$		0.964

Exploratory Team Learning

Item	r_{wg}	
Q16	0.8231	
Q17	0.8483	
Q18	0.8435	
Q19	0.8425	
Q20	0.8624	
MEAN= $(1 - S^2_k / \sigma^2_{EU})$		0.844
$R_{wg(J)}$		0.964

Exploitative Team Learning

Item	r_{wg}	
Q21	0.8824	
Q22	0.8225	
Q23	0.8420	
Q24	0.8826	
Q25	0.8219	
MEAN= $(1 - S^2_k / \sigma^2_{EU})$		0.85
$R_{wg(J)}$		0.966

APPENDIX C

$$ICC(1) = MSB - MSW / MSB + ((k-1) * MSW)$$

$$ICC(2) = MSB - MSW / MSB$$

<i>Name of the variable</i>	<i>F</i>	<i>MSbetween</i>	<i>MSwithin</i>	<i>average team size -1</i>	<i>F-1</i>	<i>F+average team size-1</i>	<i>ICC(1)</i>	<i>MSb-MSw</i>	<i>ICC(2)</i>
<i>Paradoxical Team Leadership</i>	26,151	171,981	11,920	2,758	25,151	28,909	0,870005881	160,061	0,93069
<i>Team Psychological Safety</i>	36,010	189,101	14,933	2,758	35,01	38,768	0,903064383	174,168	0,921032
<i>Exploitative Team Learning</i>	33,052	143,970	12,387	2,758	32,052	35,81	0,895057247	131,583	0,913961
<i>Exploratory Team Learning</i>	30,437	201,821	18,856	2,758	29,437	33,195	0,886790179	182,965	0,906571

APPENDIX D

Official Statement of Originality

By signing this statement, I hereby acknowledge the submitted master thesis titled “Team Learning Linking Paradoxical Team Leadership and Team Performance: A Moderated Mediation Study” to be produced independently by me, without external help.

Wherever I paraphrase or cite literally, a reference to the original source (journal, book, report, internet, etc.) is given.

Place: Maastricht

Date: January 4th, 2019

First and Last Name: Marloes Pas

Study Program: Masters in Management

Course/Skill: Master Thesis

I-Number: 31793

Signature:

A handwritten signature in blue ink, appearing to read 'MPas', is written over a horizontal line.